IN THE CLAIMS:

Please amend the claims as follows:

1. (Original) An intermediate network device having a plurality of ports for sending and receiving network messages to and from one or more entities of a computer network at least some of which are segregated into a plurality of virtual local area network (VLANs) defined within the computer network, the intermediate network device comprising:

a compact-Generic Application Registration Protocol (GARP) VLAN Registration Protocol (GVRP) application component associated with a selected port, the compact-GVRP application component having:

a GARP Information Declaration (GID) component configured to maintain VLAN registration state for the selected port in response to receiving attribute events for the VLANs;

a compact-GVRP encoder/decoder unit; and

a GVRP PDU message generator, wherein

the compact-GVRP encoder/decoder unit is configured to compute an encoded value, in accordance with an encoding algorithm, for the attribute events associated with a given set of VLANs, and

the GVRP PDU message generator loads the encoded values computed for all of the VLANs defined within the computer network within a single GVRP PDU message for transmission from the selected port.

Please add claim 2 et seq.

1 2. (New) An intermediate node as defined in claim 1 wherein the encoding algorithm is a

2 number based conversion algorithm.

1 3. (New) An intermediate node as defined in claim 2 wherein the number based conver-

2 sion algorithm is $((((E_X \times 5 + E_{X+1}) \times 5 + E_{X+2}) \times 5 + E_{X+3}) \times 5 + E_{X+4}) \times 5 + E_{X+5}$ and

3 wherein E_X corresponds to the attribute event for the first VLAN in the set, E_{X+1} corre-

4 sponds to the attribute event for the second VLAN in the set, E_{X+2} corresponds to the at-

5 tribute event for the third VLAN in the set, E_{X+3} corresponds to the attribute event for the

6 fourth VLAN in the set, E_{X+4} corresponds to the attribute event for the fifth VLAN in the

7 set, and E_{X+5} corresponds to the attribute event for the sixth VLAN in the set.

1 4. (New) An intermediate node as defined in claim 1 wherein the compact-GVRP en-

2 coder/decoder unit is configured to decode an encoded value contained in a compact-

3 GVRP PDU message, that was encoded using the encoding algorithm, to yield attribute

4 event information for a set of VLANs.

1 5. (New) An intermediate node as defined in claim 1 wherein the compact-GVRP appli-

2 cation component is configured to generate and send a GVRP PDU containing a

3 just_kidding message.

1 6. (New) An intermediate node as defined in claim 5 further comprising:

2 　　　a leave timer;

3 　　　a just_kidding timer; and

4 　　　a just_kidding state machine,

5 　　　wherein upon sending the GVRP PDU containing the just_kidding message the

6 just_kidding state machine starts the leave timer and re-starts the just_kidding timer.

7. (New) An intermediate node as defined in claim 6 comprising:

        a leave_all timer; and

        a leave_all state machine,

        wherein upon expiration of the leave_all timer the leave_all state machine enters

an active state and the compact-GVRP application component generates and sends a

GVRP PDU message that is configured to cause network entities that receive it to re-

spond with one or more GVRP PDU messages.

8. (New) An intermediate node as defined in claim 7 wherein the leave timer is set to a

high value relative to the leave_all timer.

9. (New) An intermediate node as defined in claim 7 comprising:

        a mode selection unit configured to be in one of a compatible mode, a fast com-

pact mode or a slow compact mode,

        wherein if after the compact-GVRP application component sends the GVRP PDU

message containing a just_kidding message and the mode selection unit is either in the

fast compact mode or the slow compact mode and the GVRP application receives a con-

ventional GVRP PDU message, the mode select unit enters the compatible mode.

10. (New) An intermediate node as defined in claim 7 comprising:

        a port partner variable configured to hold a source identifier,

        wherein upon processing a received GVRP message containing a negotiation

message with a source identifier the compact GVRP application component places the

source identifier in the port partner variable.

11. (New) An intermediate node as defined in claim 10 wherein upon processing a re-

ceived GVRP message containing a negotiation message with a source identifier that

3   does not match the content of the port partner variable, the compact GVRP application

4   enters the slow compact mode.

1   12. (New) An intermediate node as defined in claim 10 wherein upon processing a re-

2   ceived GVRP message containing a negotiation message with a source identifier that

3   matches the content of the port partner variable, the compact GVRP application enters the

4   fast compact mode.

1   13. (New) An intermediate node as defined in claim 1 wherein the compact GVRP appli-

2   cation is configured to generate a mixed format GVRP PDU message containing a con-

3   ventional attribute structure and a vector message.

1   14. (New) In an intermediate node having a plurality of ports for sending and receiving

2   network messages to and from one or more entities of a computer network at least some

3   of which are segregated into a plurality of virtual local area network (VLANs) defined

4   within the computer network, a method for conveying VLAN membership information

5   comprising the steps of:

6   for a set of VLANs defined within the computer network, computing an encoded

7   value, in accordance with an encoding algorithm, for attribute events associated with the

8   given set of VLANs; and

9   loading encoded values for all of the VLANs defined within the computer net-

10   work into a single GVRP PDU message for transmission at one or more ports in the plu-

11   rality of ports.

1   15. (New) A method as defined in claim 14 further comprising the step of:

2   decoding an encoded value, that was encoded using the encoding algorithm and is

3   contained in a compact-GVRP PDU message, to yield attribute event information for a

4   set of VLANs.

16. (New) A method as defined in claim 14 further comprising the steps of:

generating a GVRP PDU message containing a just_kidding message;

sending the GVRP PDU message containing the just kidding message out one or more ports of the plurality of ports; and

restarting a just_kidding timer.

17. (New) A method as defined in claim 16 further comprising the step of:

entering a slow compact mode upon the expiration of the just_kidding timer and the non-receipt of a conventional GVRP PDU message.

18. (New) A method as described in claim 16 further comprising the steps of:

entering one of a slow compact mode or a fast compact mode;

receiving a conventional GVRP PDU message; and

reverting to a compatible mode.

19. (New) A method as defined in claim 14 comprising the steps of:

receiving a first compact-GVRP PDU message wherein the first compact-GVRP PDU message contains a first source identifier.

20. (New) A method as defined in claim 19 comprising the steps of:

receiving a second compact-GVRP PDU message wherein the second compact-GVRP PDU message contains a second source identifier that does not match the first source identifier; and

entering a slow compact mode.

21. (New) A method as defined in claim 19 comprising the steps of:

receiving a second compact-GVRP PDU message wherein the second compact-GVRP PDU message contains a second source identifier that matches the first source identifier; and

5   entering a fast compact mode.

1   22. (New) An apparatus having a plurality of ports for sending and receiving network

2   messages to and from one or more entities of a computer network at least some of which

3   are segregated into a plurality of virtual local area network (VLANs) defined within the

4   computer network, the apparatus comprising:

5   means for maintaining VLAN registration state for a selected port in response to

6   receiving attribute events for the VLANs;

7   means for computing an encoded value, in accordance with an encoding algo-

8   rithm, for attribute events associated with a given set of VLANs;

9   means for loading encoded values for all of the VLANs defined within the com-

10   puter network into a single GVRP PDU message for transmission from a port in the plu-

11   rality of ports.

1   23. (New) A computer readable medium comprising computer executable instructions

2   for:

3   computing an encoded value, in accordance with an encoding algorithm, for at-

4   tribute events associated with a given set of VLANs; and

5   loading encoded values for all of the VLANs defined within the computer net-

6   work into a single GVRP PDU message for transmission from a port in the plurality of

7   ports.